

REMARKS

By this amendment, claims 1-8, 10, 12-25, 27, and 29-36 are pending, in which claims 1, 7, 10, 18, 24, and 27 are currently amended, and claims 35-36 are newly presented. No new matter is introduced.

The Office Action mailed December 31, 2003 objected to claims 7-8, 15, 24-25, and 32 as allowable but dependent on a rejected base claims and rejected claims 1-3, 10, 16, 18-20, 27, and 33 under 35 U.S.C. § 102 as anticipated by the newly-cited *Rastogi et al.* (US 6,247,016), claims 17 and 34 as anticipated by *Background* (the Background of the Invention section of the present application), claims 4, 12, 21, and 29 as obvious under 35 U.S.C. § 103 based on *Rastogi et al.* in view of *Background*, claims 5 and 22 over *Rastogi et al.* and *Background* in view of *Hall et al.* (*Hall et al.*, “Generating Fuzzy Rules from Data,” *IEEE*, 1996), claims 13 and 30 over *Rastogi* in view of *Hall et al.*, claims 6, 14, 23, and 31 over *Rastogi et al.* in view of *Shafer et al.* (*Shafer et al.*, “SPRINT: A Scalable Parallel Classifier for Data Mining,” *Proceedings of the 22nd VLDB Conference*, 1996). These objections and rejections are respectfully traversed in light of the amendment and remarks presented herein.

In response to the objection of claims 7-8, 15, 24-25, and 32, claims 7, 15, 24, and 32 have been rewritten in independent form, in which 8 and 25 are dependent on claims 7 and 24, respectively.

The rejection of claims 1-6 and 18-23 is respectfully traversed because *Rastogi et al.*, whether singly or in combination with the references applied against claims 4-6 and 21-23, fail to disclose the limitations of these claims. For example, independent claims 1 and 18, as amended, recite: “performing a cluster analysis along the selected feature to group the data into one or more clusters based on distances between the data and respective one or more centers of the one or more clusters.” This amendment does not introduce new matter because adequate descriptive

support for defining a cluster analysis in this way may be found throughout the specification, including page 13, lines 1-9 of the Specification.

This limitation is not shown in *Rastogi et al.* Rather, *Rastogi et al.* is directed to a decision tree classifier with integrated building and pruning phases (Title). In particular, *Rastogi et al.* disclosed that its “tree is built breadth-first by recursively partitioning the data until each partition is pure” (col. 3:40-41). *Rastogi et al.* then describes two conditions for splitting the data: if the data A is numeric, then the split is of the form  $A < v$ , and if data A is categorical, then the split is of the form  $A \in V$ . Then, the *Rastogi et al.* chooses the “split with the least entropy” (col. 4:38). In neither case, however, does *Rastogi et al.* described cluster analysis or even a split “based on distances between the data and respective one or more centers of the one or more clusters,” as recited in independent claims 1 and 18. Furthermore, neither *Background, Hall et al.*, nor *Shafer et al.* disclose the step of performing the cluster analysis as recited in claims 1 and 18.

With regard to claims 10, 12-16, 27, and 29-33, the rejection over *Rastogi et al.* is also traversed since *Rastogi et al.*, whether singly or in combination with the references applied against claims 12-15 and 29-32, does not disclose the elements of claims 10, 12-16, 27, and 29-33, including: “performing a plurality of cluster analyses along each of the features to calculate a plurality of respective partition coefficients based on membership functions of the data for one or more clusters in respective said cluster analyses.” Neither the numeric split nor the category split, however, are based on membership functions of the data, as recited in independent claims 10 and 27. Furthermore, neither *Background, Hall et al.*, nor *Shafer et al.* disclose the step of performing the cluster analysis as recited in claims 10 and 27.

The rejection of claims 17 and 34 over *Background* is also respectfully traversed. As a preliminary matter, the Manual of Patent Examining Procedure § 608.01(c) states that the

purpose of the Background section is as follows: “Where applicable, the problems involved in the prior art or **other information** disclosed which are solved by the applicant’s invention should be indicated” (emphasis added). Accordingly, unless something is explicitly stated to be prior art, the mere inclusion of subject matter in the Background section is not sufficient by itself to be an admission to be prior art. Nevertheless, the Examiner’s attention is drawn to *Janikow* (Cezary Z. Janikow, “Fuzzy Decision Trees: Issues and Methods,” *IEEE*, 1998) for a more detailed discussion of FID3.

However, neither the *Background* nor *Janikow* disclose the features of claims 17 and 34. For example, claims 17 and 34 recite: “selecting the one of the features corresponding to the maximal partition coefficient.” In FID3, on the other hand, an attribute is chosen based on a maximum information gain, which is based on entropy instead of partition coefficients (*Background*, p. 4, line 13, cf. p. 3, line 17; *Janikow*, p. 7, col. 2). The statement of the rejection appears to construe the term “maximum information gain” to cover partition coefficient, but as disclosed in the *Background* and in *Janikow* such an interpretation of a reference is inconsistent with what one of ordinary skill in the art would understand “maximum information gain” to be.

Furthermore, newly dependent claims 35-36 recite a definition of maximal partition coefficients that is further not disclosed in the *Background* or *Janikow*.

Therefore, the present application, as amended, overcomes the objections and rejections of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at 703-425-8516 so that such issues may be resolved as expeditiously as possible.

Respectfully Submitted,

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Date

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